

Patent public notice number: CN2222376Y utility model right description

Name of utility model: Electronic information reading machine

Summary: This industrial new design is a kind of electronic information reading machine, it consists of a micro PC portion, a monitor portion, and a communication telephone portion, and memory equipment, a communication reading mouth, connection and a telephone input terminal, and a circuit terminal are connected with PC single chip for the single chip of a micro PC portion through a modem, respectively. It can convert into the picture and sentence which have usually been transmitted from the public telephone circuit and which can peruse information, and this industrial new design can be read by the monitor.

Moreover, self carried out creation, or the transmitted information can be transmitted to other electronic information reading machines or computers, and the information in a computer can be read using the key of a telephone, and it can forward again.

The range of a utility model right claim

one -- . -- a kind -- an electron -- information -- reading -- a machine -- the -- the feature -- the following -- a thing -- containing -- : -- (-- a --) -- PC -- a single -- a chip -- a hard disk -- CDROM a keyboard, the micro PC portion which consists of a connection port and a CGA port, and EPROM in which the single chip of PC was connected with the address bus, and a data bus and a control bus -- passing -- CDROM a hard disk -- separate -- three

A keyboard port and a CGA monitor port are separately pulled out from each terminal of PC single chip.

(b) The monitor portion and it which consisted of TV ports connect with PC single chip video terminal, and output a video signal through conversion of a CGA monitor signal.

(c) The communication telephone portion and telephone port which consist of a modem, a telephone port, and a telephone circuit port, and a circuit port are connected with PC single chip through a modem.

Description Electronic information reading machine

This industrial new design is the electronic information reading machine of especially a kind in a kind of communication-of-information equipment.

The terminal equipment of a certain internal and external video information system cannot be operated only by the key of a telephone, and cannot perform Chinese character-ization again now, either.

Moreover, a domestic screen display network and screen display equipment consist of a transceiver, an electric current detector, a trigger, an electronic switch, a timer, a modem, an outside line circuit, a display screen, a communication card port, etc., and volume cannot operate structure by complexity and the key of a telephone greatly, either.

Volume is small, and the purpose of this industrial new design is easy structure, and is the electronic information reading machine which can be operated by the key of a telephone.

: in which this utility model contains the following -- a 1. PC single chip, a hard disk, and CDROM the micro PC portion and PC single chip which consisted of a keyboard port and a CGA monitor -- an address bus, and EPROM connected to a data bus and a control bus, three buses where a hard disk and CDROM are connected to PC single chip.

The keyboard port and the CGA monitor port are separately pulled out from the terminal of PC single chip.

2. It connects with PC single chip video terminal, and the monitor portion which consisted of television ports pulls out a television signal through conversion of a CGA monitor signal.

3. As for the communication telephone portion which consisted of a modem, a telephone port, and a telephone circuit port, a telephone port and a circuit port are connected to PC single chip through a modem.

The technical effect of this industrial new design changes into a video signal the information transmitted from the various sources of information on a :1. public telephone network, and can peruse it on a terminal.

2. The received information which carried out creation in person can be transmitted to an another information reading machine or an another computer.

3. By the key of a telephone, the information in a computer can be taken out and it can forward again.

4. It is small convenient and a cellular phone is possible.

5. It can be adapted for the demand of radio or cable transfer.

6. Since volume is small, you can equip in the case of ordinary telephone and can make it grow into the smart telephone of many effect.

: the following appendix figure explains this utility model to be in an example:

Fig. 1 is a block diagram of this utility model; -- Fig. 2-5 show the circuit diagram of Micro PC, and Fig. 6 shows the circuit diagram of TV port, and Fig. 7 shows the circuit diagram of a telephone port, a telephone circuit port, and a modem Fig. 1 shows the technical plan of this industrial new design -- namely, PC single chip 1, a hard disk 2, and CDROM -- 3, the keyboard port 4, and the micro PC portion come out of and constituted --

In the PC microchip 1, EPROM (U21 in Fig. 3) is connected to an address bus, a data bus and a control bus; Hard disk 2 (Fig. 4), CDROM 3 (Fig. 5) are connected through different bus to the PC single chip 1

TV monitor portion 6 which consisted of TV ports where; CGA monitor port 7 where the keyboard port 4 is pulled out from PC microchip suitable terminal is pulled out from the suitable terminal of PC single chip,

The communication telephone portion which consists of a; modem 5 which it is connected with the video terminal of PC single chip, and is converted and outputted to TV signal through a standard CGA monitor signal, a telephone port 8, and a telephone circuit port 9,

The telephone port 8 and a telephone circuit port are connected with PC single chip through a modem 5.

In a figure, B figure 2 adopts U11 and F8680 chip, and PC single chip 1, and the circuit diagram of an attached part and PC single chip 1 are one micro PC, and it inputs them into an address bus A, a data bus D, and a control bus by direct drive. This three major bus is connected with the indispensable parts of Micro PC.

keyboard port 4 (B) which Fig. 2 connected PC microchip U11 again, and was connected A speaker port (C), the CGA monitor port 7 (E), and RS-232 port (F) And it is a clock signal generator etc.

Fig. 3 shows the connection relation between the indispensable portion EPROM of PC single chip 1, an address bus drive portion (U22, U23, U24), and the buffer of a data bus and a drive portion (U25).

EPROMU21 -- an address bus (A0, A1, --, A16), and a data bus (... D0, D1, D7) and a control bus (MEMR\* --)

Connection of the suitable terminal of ROMCS\* and PC single chip U11, the control procedure of a memory discharge system,

As for the number of EPROMU21, 271001 and the address bus drive portions U22, U23, and U24 (numbers are all 74LS(s)244) drive the address signal A of PC single chip (0--19).

A buffer and the drive portion U25 (numbers are all 74LS(s)245) of a data bus drive the data signal of PC single chip 1.

Fig. 4 shows the hard disk track connection relation of a micro PC portion.

DRAMU31, U32, U33 ... U38

(number -- all -- M74C4001) -- a hard disk -- constituting -- the resistance arrangement RN31, RN32, and RN33 -- leading -- an address bus (... A0, A1, A10), and a data bus (... D0, D1, D-15) and a control bus (CS256\*, CS512\*, and CASL\* --)

CASH\*, WEL\*, and WEH\* connect with the figure [U11] 1 directly, and are set to DRAM of PC system.

Fig. 5 is programmable to the Lord who shows the circuit of CDROM. Logic It consists of an array U41 (number 16L8), and EPROM U43 and U44 (a number is all 272001).

U41 performs logic control of address distribution and time rank to a ROM desk using an address bus and a control bus with the logic chip which can carry out an edit design itself.

U43 and U44 memories the control procedure and fixed information on DOS of a Chinese character system, and an application system with an EPROM chip.

The address and data signal of U41, U43, and U44 are connected with the address division motive of Fig. 3, the address of PC chip, and a data bus.

It consists of set circuit chips U51 which show the circuit of TV monitor portion and which mainly convert a standard CGA monitor signal into a video signal, the input terminal of the circuit leads the suitable terminals (BVIDEO, RVIDEO, etc.) of PC single chip U11 each other, and conversion and a standard CGA monitor signal in a

CGA port (E of Fig. 1), and Fig. 6 is AV. A signal is outputted.

B figure 7 shows the circuit of the modem of a communication telephone portion, a telephone port, and a telephone circuit port.

As for ICU64, the logic array (part number 16L8) in which a program is possible converts the signal of RS232 in a figure, and communicative logic control, decoding signal conversion, and a communication state display are driven.

ICU65 is an important part for the communications department in a modem (part number AM7910PC), and 21200bps of CCITV.23 form performs bidirectional modulation conditions and a decode of data by the half duplex operating method.

ICU62 performs separation, filtration, and decoding for a DTMF receiver's (part number MT8870CE) signal.

The three above-mentioned integrated circuits U64, U65, and U62 connect with the suitable terminal of PC (F of Fig. 1) single chip through RS232 port.

P561 and P562 are separately connected to a telephone port and to a telephone circuit port, and the telephone and the telephone wire are connected.

When, as for the operation principle of this practical use machine, :user opens a power supply and information is acquired through a modem, a hard disk issues instructions and PC single chip displays information on the split screen of a terminal at the same time it memories the transmitted information in CDROM.

When a user sends a desk 2 and the information by which creation was carried out within three to another user, PC chip displays the information on a terminal based on instructions, and sends it to another user through the modem 5 of a communication port based on instructions.

the time of the reading machine stopping information 收取 -- PC single chip -- instructions -- being based -- a keyboard 4 -- or the information in a desk can be put in or taken out by the telephone key

When the :1. user the following is [ user ] like the work style of this practical use machine opens a power supply, a Chinese character system is automatically taken out from ROMdisk, and a communication control system is started.

2. After a user telephones, a telephone leads, it drives in its own user name and password and a decoder identifies, instructions are transmitted to PC single chip through a RS-232 port, and identify by software.

3. It accepts, and when it is instructions, a modem is controlled by RS-232, it will be in an acceptance state, and a signal is amplified, and it displays on a recovery by CCITTY2.3, and displays on a screen by soft support.

4. When it is dispatch instructions, modem control will be in a transmission state, the data transmitted from RS-232 is amplified, and it sends to a track.

5. When it is control instructions, based on instructions, a page is moved vertically and horizontally or software achieves effects such as virtual memory preservation.

6. If it is telephone call instructions, a telephone will be put into a telephone office, or a telephone will be closed, and communication will be ended.

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## [12] 实用新型专利说明书

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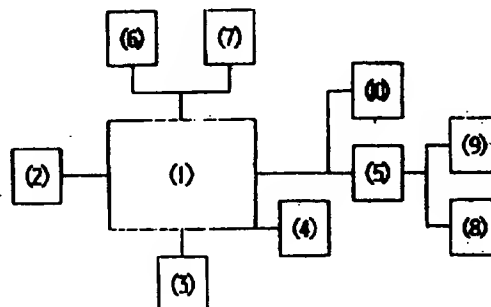
[21]申请号 95208480.5

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[54]实用新型名称 电子讯息读写器

[57]摘要

本实用新型是一种电子讯息读写器，包括微机 PC 部分、电视显示部分和通讯电话部分，微机 PC 部分的单片 PC 芯片与存贮器和讯息通读接口连接，电话接口和线路接口分别通过调制解调器与单片 PC 芯片连接。本实用新型能将公用电话网传来的讯息转为可视图文信息在显示终端阅读，并能将自身生成或接收来的讯息转发到其它电子讯息读写器和电脑上，能用电话键调阅计算机里的信息并转发。



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# 权 利 要 求 书

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1. 一种电子讯息读写器, 其特征在于包括:

(a) 由PC单片芯片、固定盘存贮器、活动存贮器、键盘接口和CGA显示接口组成的微机PC部分, PC单片芯片有通过地址总线、数据总线、控制总线相连的EPROM; 活动存贮器、固定盘存贮器分别通过三总线与PC单片芯片相接; 键盘接口和CGA显示接口分别从PC单片芯片的相应端引出;

(b) 由TV接口构成的电视显示部分, 它与PC单片芯片的视频信号端相接, 通过对标准CGA显示信号的转换输出电视信号;

(c) 由调制解调器、电话机接口、电话话路接口构成的通讯电话部分, 电话接口和线路接口通过调制解调器与PC单片芯片相接。

# 说 明 书

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## 电子讯息读写器

本实用新型涉及一种信息传递装置，特别是一种电子讯息读写器。

现有的国外可视图文信息系统终端设备，不能单用电话键盘使用，不能汉字化。而国内的话屏网络的话屏控制装置是由收发器、检流器、触发器、电子开关、定时器、调制解调器、外线话路、话屏监听电话、接口适配器、话屏通讯卡的接口组成，体积大、结构复杂，而且不能用电话键码操作。

本实用新型的目的是提供一种体积小，结构简单，能用电话键码操作的电子讯息读写器。

本实用新型包括：

1. 由P C单片芯片、固定盘存贮器、活动存贮器、键盘接口和C G A显示接口组成的微机P C部分，P C单片芯片设有采用地址总线、数据总线、控制总线相连的E P R O M；固定盘存贮器、活动存贮器分别通过上述三总线与P C单片芯片相接；键盘接口和C G A显示接口分别从P C单片芯片的相应端引出。

2. 由T V接口构成的电视显示部分，它与P C单片芯片的视频信号端相接，通过对标准C G A显示信号的转换，输出电视信号。

3. 由调制解调器、电话机接口、电话话路接口构成的通讯电话部分，电话接口和线路接口通过调制解调器与P C单片芯片

相接。

本实用新型的技术效果是：

1. 能将公用电话网上各类发射源传来的讯息转为可视图文信息在显示终端上阅读；

2. 能将自身生成或接收来的讯息发到其它电子讯息读写器和电脑上；

3. 能用电话键调阅计算机里的信息并转发；

4. 能随身携带使用，小巧灵便；

5. 能适应有线无线传输的需要；

6. 体积小，能装进普通电话机壳内，使之成为多功能的智能电话。

下面结合附图以一个实例说明本实用新型。

图1是本实用新型的方框图；

图2至图5是微机PC部分的电路图；

图6是TV接口的电路图；

图7是电话机接口、电话话路接口和调制解调器的电路图。

图1显示了本实用新型的技术方案，它包括由PC单片芯片1、固定盘存贮器2、活动存贮器3、键盘接口4构成的微机PC部分，PC单片芯片1设有用地址总线、数据总线、控制总线相连的EPROM（图3中的U21）；固定盘存贮器2（图4）、活动存贮器3（图5）分别通过总线与PC单片芯片1相接；键盘接口4从PC单片芯片1的相应端引出，CGA显示接口7从PC单片芯片1的相应端引出；由TV接口构成的电视显示部分6，它与PC单片芯片1的视频信号端相接，通过对标准CGA

显示信号的转换输出电视信号；由调制解调器 5、电话机接口 8、电话话路接口 9 构成的通讯电话部分，电话机接口 8 和电话话路接口通过调制解调器 5 与 PC 单片芯片 1 相接。

图 2 示出了 PC 单片芯片 1 及附属器件的电路图，PC 单片芯片 1 在图中为 U 1 1，采用 F 8 6 8 0 芯片，是一台 PC 微型计算机，直接驱动输出、输入地址总线 A、数据总线 D 及控制总线，此三大总线与 PC 微机必备（配备）的部分（部件）连接。图 2 还示出了与 PC 单片芯片 U 1 1 相应端连接的键盘接口 4（B）、扬声器接口（C）、CGA 显示接口 7（E）、RS-232 接口（F）及时钟信号产生器等。

图 3 示出了 PC 单片芯片 1 的必备部分 EPROM、地址总线驱动部分（U 2 2、U 2 3、U 2 4）及数据总线的缓冲和驱动部分（U 2 5）的连接关系。EPROM U 2 1 通过地址总线（A 0，A 1，…，A 1 6）、数据总线（D 0，D 1，…D 7）和控制总线（MEMR\*，ROMCS\*）与 PC 单片芯片 U 1 1 的相应端连接，存放系统监控制程序，EPROM U 2 1 的型号为 2 7 1 0 0 1。地址总线驱动部分 U 2 2、U 2 3、U 2 4（型号均为 7 4 L S 2 4 4）驱动 PC 单片芯片 1 的地址信号 A（0…1 9），数据总线的缓冲和驱动部分 U 2 5（型号为 7 4 L S 2 4 5）驱动 PC 单片芯片 1 的数据信号。

图 4 显示了 PC 微机部分的固定盘存贮器的接线关系，DRAM U 3 1，U 3 2，U 3 3，…U 3 8（型号均为 M 7 4 C 4 0 0 1）构成了固定盘存贮器，通过电阻排 RN 3 1，RN 3 2，RN 3 3 与地址总线相连接，通过地址总线（A 0，



A1, ..., A10) 和数据总线 (D0, D1, ..., D15) 及控制总线 (CS256\*, CS512\*, CASL\*, CASH\*, WEL\*, WEH\*) 与图1中的U11直接联接, 作为PC系统动态存储器。

图5示出了活动存贮器的电路, 主要由可编程逻辑阵列U41 (型号16L8) 和EPROMU43, U44 (型号为272001) 组成。U41为自行编程设计的逻辑芯片, 利用地址总线和控制总线对ROMDisk进行地址分配及按时序要求进行逻辑控制。U43、U44是EPROM芯片, 存放DOS、汉字系统、应用系统控制程序及固定信息。U41, U43, U44的地址和数据信号通过图3中的地址驱动器与PC芯片的地址和数据总线相接。

图6示出了电视显示部分的电路, 主要由对标准CGA显示信号进行电视信号转换的集成芯片U51构成, 该电路的输入端通过CGA接口 (图1中的E) 与PC单片芯片U11的相应端 (BVIDEO, RVIDEO等) 相接, 通过对标准CGA显示信号的转换, 输出AV电视信号。

图7示出了通讯电话部分的调制解调器、电话机接口、电话路接口的电路, 在图中, 集成块U64为可编程逻辑阵列 (型号为16L8), 对RS-232信号进行应用转换、通讯逻辑控制、解码器解码信号转换及通讯状态显示进行驱动。集成块U65为调制解调器 (型号为AM7910PC) 是通讯部分的核心, 按CCITT V.23组态21200bps半双工工作方式对数据进行双向的调制及解调。集成块U62为DTMF接

收器（型号为MT 8 8 7 0 C E），对双音多频拨号信号分离、滤波和译码。上述三个集成电路U 6 4、U 6 5、U 6 2通过R S - 2 3 2接口（图 1 中的F）与P C单片芯片U 1 1相应端连接。P 5 6 1、P 5 6 2分别为电话机接口和电话话路接口，它们分别与电话机和电话线相接。

本实用新型的工作原理是：

当用户打开电源通过线路接收经过解调器或解码器送来的讯息时，P C单片芯片将传输过来的讯息一方面存贮在活动存贮器 3 内，一方面通过固定盘存贮器 2 指令分屏显示在终端（显示器）上。当用户需要将存贮器 2、3 生成的讯息发送到另一用户时，P C芯片根据指令调出该条讯息显示在终端上并根据指令通过通讯接口的解调器 5 发到另一用户。当读写器停止接收讯息时，P C单片芯片可根据指令用键盘 4 或电话键盘写入或调阅存贮器里的信息。

本实用新型的工作流程如下：

1 . 用户开机，自动从ROM d i s k 中调用汉字系统及启动通讯控制系统。

2 . 用户拨通查询台的电话并听到应声后，用户在电话机上输入自己的用户密码及键码命令，解码器识别后通过R S - 2 3 2 接口传送给单片P C机，用软件识别。

3 . 如果命令属接收类，由R S - 2 3 2 控制调制解调器（M o d e m）处于接收状态，放大接收并解调按C C I T T V 2 . 3 协议传递的信息。由软件支撑在屏幕上显示出来。

4 . 如果命令属发送类，则控制调制解调器处于发送状态，

把RS-232口传来的数据调制放大后，送上话路。

5. 如果命令属控制类，则软件根据命令提供上下翻页，左右移动，虚拟存盘等功能。

6. 如果是请求通话命令则与查询台通电话，或挂电话结束通讯。

# 说明书附图

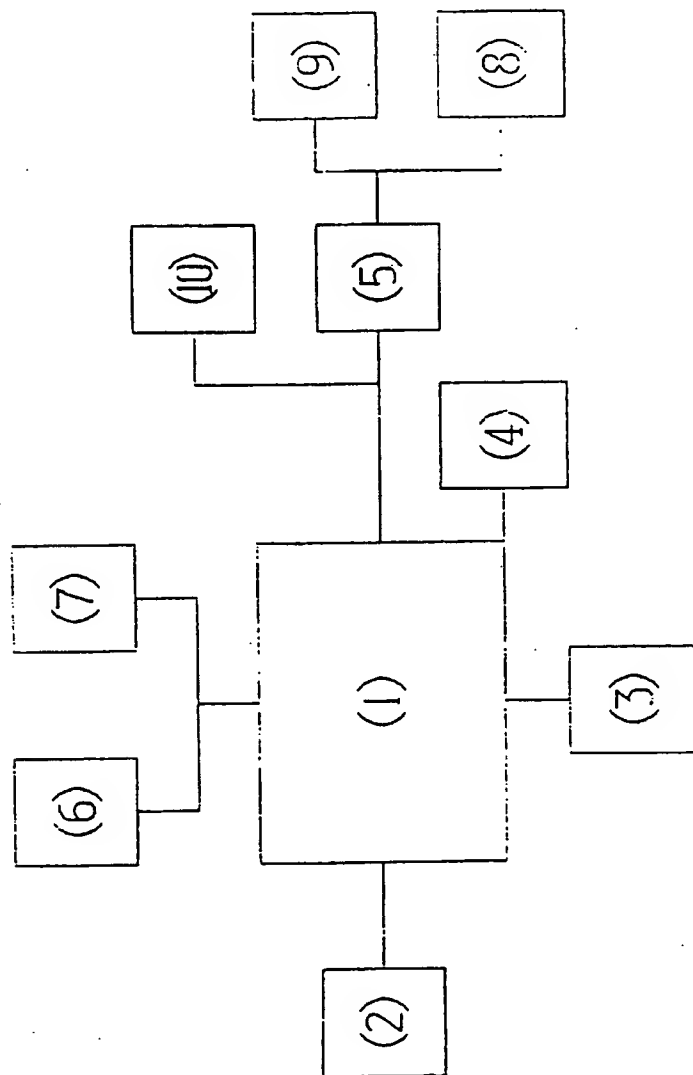
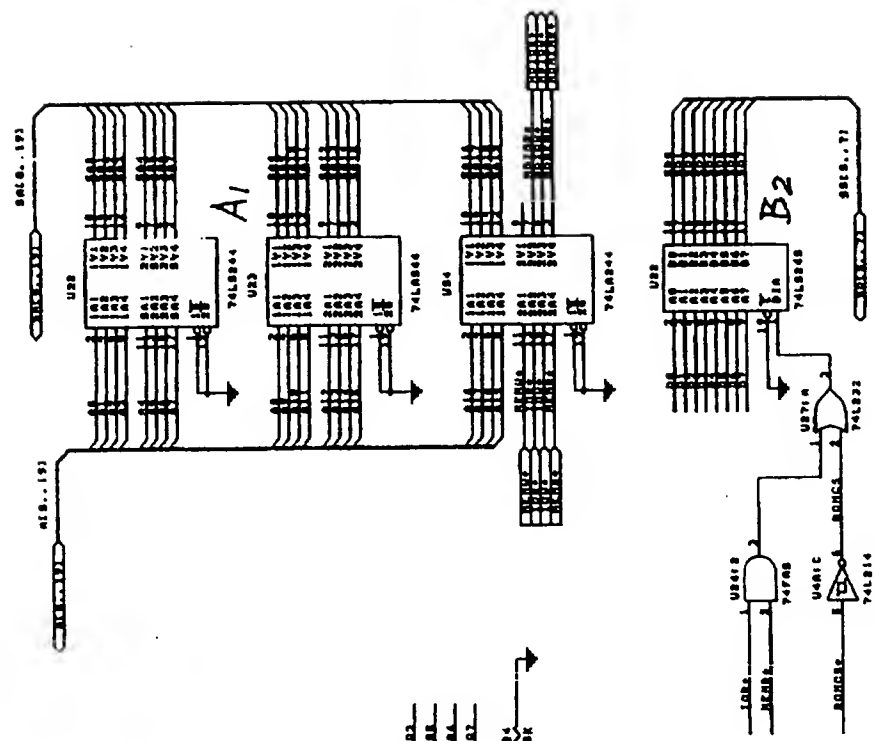
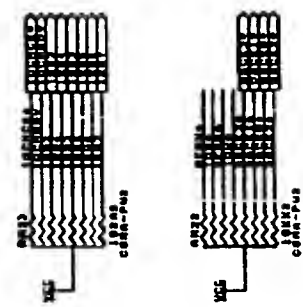
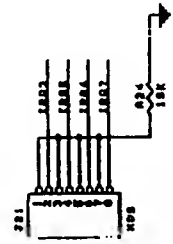
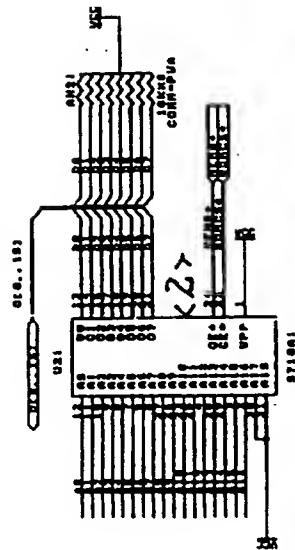


图 1



# SYSTEM BIOS



# SYSTEM DRAM

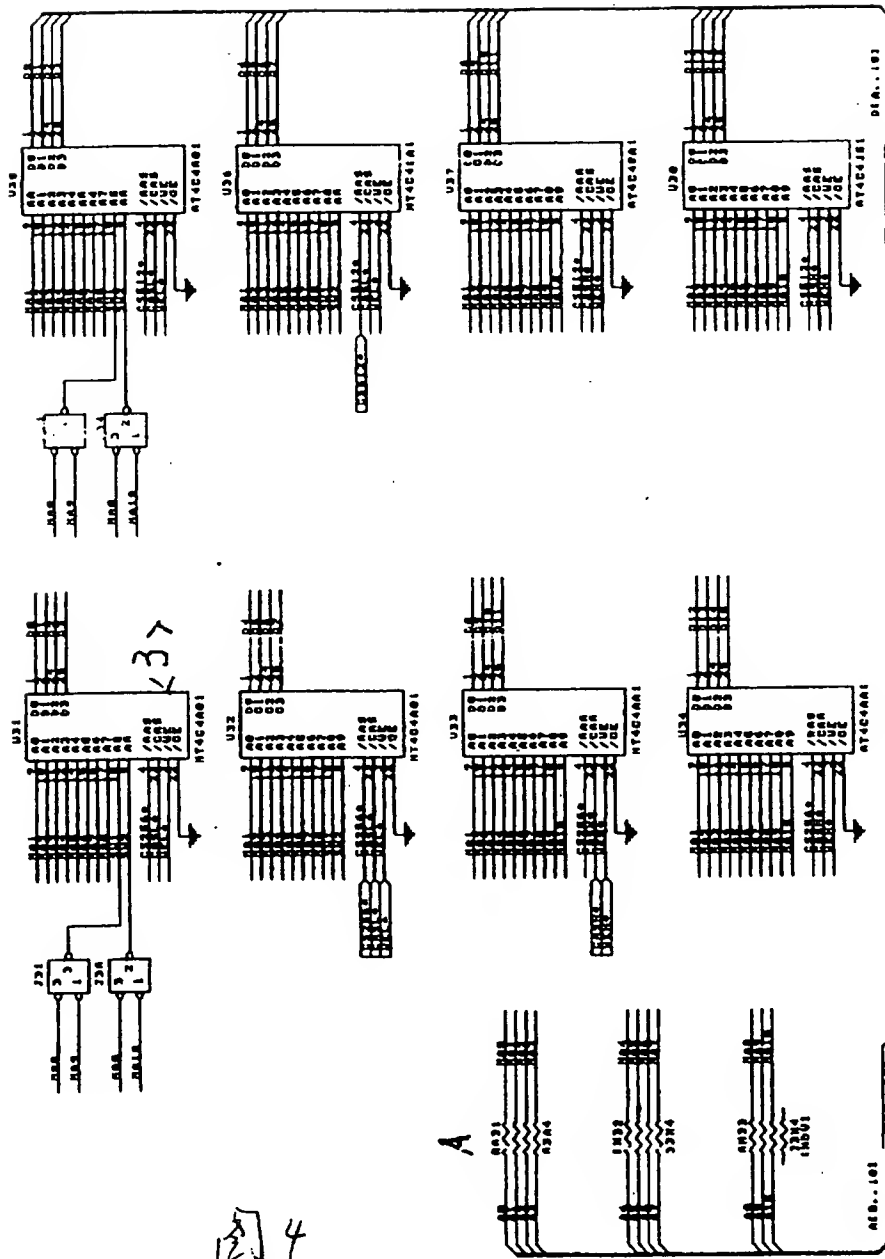


图 4

图 5





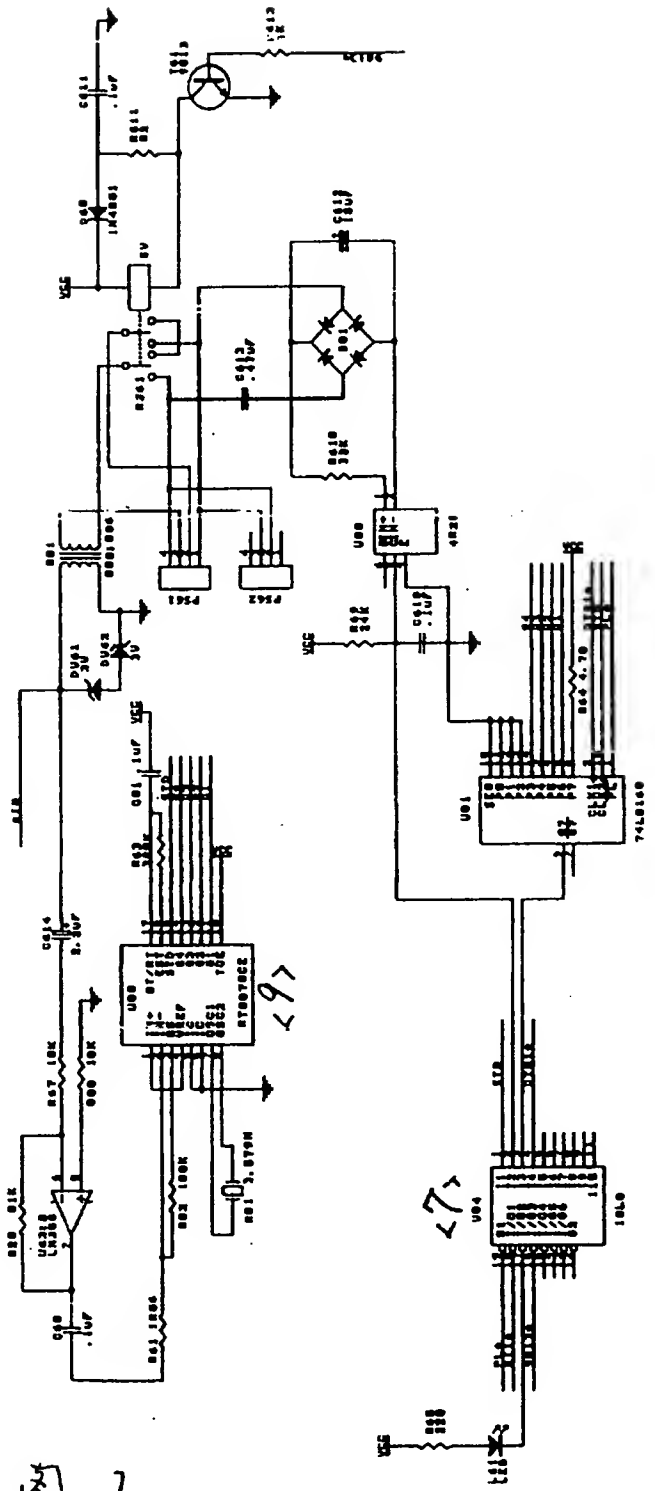
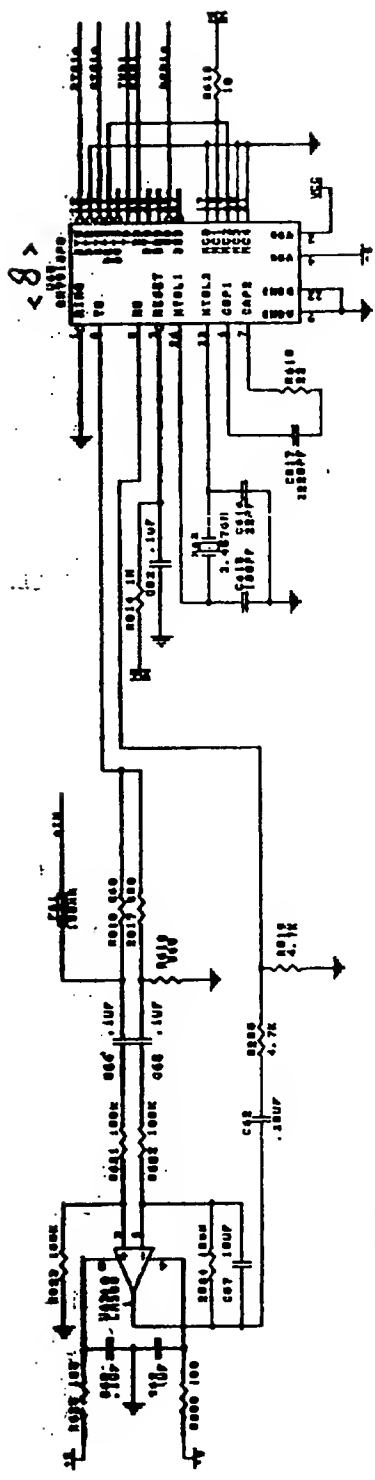


图 1